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ABSTRACT

The implementation and evaluation of a quality daily physical education program into a 14-room elementary school in Maple Ridge, British Columbia, is reported. The implementation process involved the services of a university professor who served as an external change agent and consultant within the project. The consultant made 20 day-long visits to the school throughout 1980-81 in order to dialogue with teachers; to give presentations to teachers; to give lesson demonstrations; to provide feedback following observations of lessons; to team-teach with and coach teachers; and to provide teachers with curriculum materials. Data concerning eight objectives comprised teacher, principal, and consultant interview transcripts; the principal's supervisory notes and reports; the consultant's anecdotal, observation, and working notes; a teacher questionnaire; and pupil attitude, knowledge, and psychomotor tests. The data were examined largely through content analysis and were presented employing the processes of triangulation and corroboration in order to arrive at valid and reliable statements. This investigation principally involved 45 grade 3 and 45 grade 7 pupils, 13 teachers, a principal, and a consultant. A further 290 pupils ranging from kindergarten through grade 7 were also involved. This study resulted in eight recommendations related to implementation and evaluation processes. (Author/PN)

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Report No. 82:13

PITT MEADOWS PHYSICAL EDUCATION PROJECT: EVALUATION OF AN IMPLEMENTATION PROJECT

Peter R. Moody

U.S. DEPARTMENT OF EDUCATION
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GRANT NO.: DG 301

AUTHOR(S): Peter R. Moody

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Pitt Meadows Physical Education Project:
Evaluation of an Implementation Project

Peter R. Moody

assisted by

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School of Physical Education and Recreation,
University of British Columbia

June, 1982

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Report to E.R.I.B.C.

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Field Agents: Bob Corbett, Valerie Day, Karen Lowe, Shannon McCreight, and Mike Murphy

Field Collaborators: John Parry and the Teachers of Pitt Meadows elementary school, Maple Ridge.

This project was completed with the financial assistance of a research grant from the Educational Research Institute of British Columbia. Financial and other assistance from School District #42 (Maple Ridge) and the Field Development Office, University of British Columbia, were also essential to this investigation.

Abstract

This paper reports on the evaluation of a project designed to implement a program of quality daily physical education into a 14-room elementary school in Maple Ridge, British Columbia. The majority of the teachers on staff were non-specialist teachers who taught physical education to their home-room classes. Prior to implementation of this project, pupils typically received two lessons of physical education weekly. For most classes, physical education consisted largely of games activities. The instigation of the project was a staff-principal decision.

The implementation process involved the services of a university professor who served as an external change agent and consultant within the project. The consultant made 20 day-long visits to the school throughout 1980-81 in order to dialogue with teachers; to give presentations to teachers; to give lesson demonstrations; to provide feedback following observations of lessons; to team-teach with and coach teachers; and to provide teachers with curriculum materials.

In consultation with the school staff, eight objectives were selected to guide the program and form the basis for evaluation. Data concerning the objectives comprised teacher, principal, and consultant interview transcripts; the principal's supervisory notes and reports; the consultant's anecdotal, observation, and working notes; a teacher questionnaire; and pupil attitude, knowledge, and psychomotor tests. The data were examined largely through content analysis and were presented employing the processes of triangulation and corroboration in order to arrive at valid and reliable statements.

The findings of this investigation indicate that: (1) It is possible and practical for non-specialist teachers to teach four-to-five periods of quality physical education weekly without loss of pupil academic standing or undue stress on teachers; (2) Teachers are competent learners who readily acquire new knowledge and skills if they have the desire and intent to do so; (3) Quality control may be exercised over physical education lessons by providing appropriate curriculum materials, together with inservice preparation of teachers; (4) An increase in the number of physical education lessons (to four-to-five lessons weekly) appears to be related to fewer pupil discipline problems, improved pupil self-image, and improved pupil academic work performance; (5) Teachers adapt and adopt educational innovations at varying rates and must receive assistance in individual and personal ways; (6) The full adoption of a major innovation into one school is a process which appears to require more than one year.

This study resulted in eight recommendations related to implementation and evaluation processes.

Acknowledgements

I wish to express my admiration for the courage, professional concern, and forebearance shown by the teachers and principal of the Pitt Meadows elementary school. I congratulate them on their decision to evaluate their school programs, to select a course of action, and to pursue their set goals with dedication - thereby achieving considerable success.

The Maple Ridge school board and central office are thanked for their generous assistance, encouragement, and support - given to this writer, but more especially given to the implementation project and the concept of quality daily physical education.

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Chapter I. INTRODUCTION

Initiation of the Project

In British Columbia, as in many other school systems, the teaching of physical education at the elementary level has a history of oversight and neglect. In most elementary schools, teachers have been responsible for planning and teaching physical education to their homeroom classes. The preservice professional education of elementary teachers provides insufficient preparation for this responsibility (Carre, 1979), and for many children, physical education lessons provide a meagre experience of a limited number of activities on a twice weekly basis. Furthermore, there has been little formal or standardized evaluation of pupil learning or performance, and there are no reliable data to show that elementary physical education programs have had a widespread, generally positive, demonstrable effect upon pupils.

In 1971, the province's Ministry of Education issued a revised curriculum guide for elementary physical education. The 1971 guide differed from preceding guides in some very significant respects. The new guide quite clearly advocated that:

1. physical education lessons should be taught to all elementary school classes on a daily basis;

2. all school physical education programs should include well developed lessons in at least the areas of games, dance, and gymnastics; and

3. teachers should employ a variety of appropriate teaching styles ranging from direct (teacher-centred) methods, through limitation methods, to exploration and discovery (pupil-centred) methods of teaching.

In an apparent attempt to assist teachers in the adoption of what was recommended in the guide, the Ministry of Education sent to each elementary school in the province a set of 14 resource books dealing with various aspects of physical education. No other official action was taken, but dedicated individuals (e.g., from the universities, the district coordinators, and the Physical Education Society) provided many one-shot workshops.

In 1975, a revised edition of the guide confirmed the directions introduced in 1971, but no further assistance was provided by the Ministry to aid teachers in the adoption process.

Since 1971, and most particularly since 1975, several studies relating to elementary physical education have been conducted in British Columbia (Vancouver, 1976; Nanaimo, 1978; Coquitlam, 1977; Richmond, 1979), but relatively little is known concerning the processes by which attempts have been made to implement programs of physical education. Fullan (1982) has commented that implementation is a process, not an event, and this contention is supported by the apparent slow rate of adoption (see Carre, 1979) following the advent of the 1971 guide.

The general accuracy of this statement notwithstanding, it should be recorded that in the small number of school districts employing district coordinators of physical education, there have been some notable successes in the adoption of daily physical education programs largely because of the efforts of the coordinators (Conference on quality daily physical education, Vancouver Teachers' Centre, 1981). The majority of the 79 school districts in the province were without the services of a coordinator, however, and general progress toward the adoption of programs of quality daily physical education as outlined in the curriculum guide was negligible: Isolated workshops, presentations, and other occasional services provided by expert physical educators had little apparent general effect.

With the picture as depicted above in mind, it is apparent that much could be done to facilitate the more rapid and effective adoption of quality daily physical education programs if more was known about important factors involved in the implementation process. Thus, when a school in the Fraser Valley region of British Columbia requested assistance in the development and implementation of such a program, advantage was taken in order to conduct a study of the implementation processes employed and, concurrently, conduct a formative evaluation of the project.

Purpose of the Project

The project reported on in this paper had two complementary goals:

1. To design and implement an educational innovation, specifically that of quality daily physical education.

2. To monitor, document, and examine the processes used in implementation.

The first goal is further delineated by the following specific objectives:

1. To ensure that all pupil take part in at least three periods of physical education each week (to be phased in by December 23, 1980). Subsequently, to extend this number to four or five periods per week.

2. To improve the quality of instruction which children receive in physical education.

3. To increase the number, variety, and propriety of the activities in which children engage during physical education lessons.

4. To assemble a suitable bank of materials and resources for school use.

5. To assess the results of allocating an increased allotment of time to physical education.

6. To assist teachers in developing and expanding their knowledge and understanding of physical education (including substantive content and appropriate teaching styles or strategies).

7. To maintain and/or improve positive attitudes toward physical education on the part of the pupils, teachers, administrators, and parents.

8. To ensure full adoption of a quality daily physical education program through the commitment of teachers.

Implicit in the intent of the second goal is the provision of an implementation model and recommendations which may serve similar implementation undertakings.

Definition of Terms

Implementation: "is the putting into practice of a new idea, program, or set of activities whether or not these activities are initiated external to the school, or by the school staff or individual teachers" (Fullan, 1979b: 10).

Innovation: "is an idea or practice which is perceived as new by the potential adopting unit" (Hoyle, 1969).

Quality daily physical education: is defined as consisting of daily periods of physical activity extending at least as long as regular lessons. At least three of these periods must be essentially instructional; the remaining periods may consist of essentially fitness activities (e.g., Health Hustle, Fun Run). Lessons should conform to the guidelines listed on page 1.

Outline of this Report

Chapter one has introduced an implementation project for case study analysis. Chapter two contains an abbreviated review of the related literature on implementation of school innovations. Chapter three outlines the procedures and methods adopted in conducting the program, and recording and analysing the data. Chapter four presents the results of the implementation processes and discusses their possible implications. It was originally intended to include a report on the second goal of this project in a chapter of this study. It has been decided, however, to present a report on implementation processes in a separate document (Moody, in press).

Chapter II. REVIEW OF THE LITERATURE ON IMPLEMENTATION

Introduction

> There are few things in education which offer so much promise and are so frustratingly wasteful as the multitude of in-service activities and proposals across this country, and elsewhere. What we need more than anything else is some conceptual and empirical clarity about the purposes and nature of what amounts to a phenomenon whose complexity is greatly underestimated and misunderstood. (Fullan, 1979b: 10)

In arriving at this conclusion, Fullan called upon his own experiences in the field as well as examining reviews and studies drawn from across Canada, the United States, Europe, and the United Kingdom. The purpose of this chapter is to examine the literature concerning the phenomenon of implementation. This examination will guide the design and investigation of a specific program of implementation in a school setting.

Although it is not claimed that this study, in itself, will completely answer Fullan's call for "some conceptual and empirical clarity," it is intended that information will be provided which will add to a better understanding of "the purposes and nature" of in-service activities. It should be noted that, in this context, in-service activities are regarded as an essential part of any implementation program. In many instances the meaning and activities of the two terms overlap to the extent that they may be regarded as synonymous. In this respect, Young's (1979) definition is most acceptable when he describes in-service education as "any activity that contributes to a sharing of ideas among teachers, an improvement in the professional or personal knowledge and skills of a teacher, or the installation of an innovation in a school's program" (p. 1).

The following section will examine implementation or change processes. This will be followed by an outline of some of the problems of implementation. Next, factors will be identified which appear to assist implementation. Finally, the matter of analysis and assessment of implementation processes will be discussed.

The Change or Implementation Process

Etzioni (1970) was only echoing the opinion of many others when he noted the "uncomfortable possibility that human beings are not very easily changed after all" (p. 45). This general statement certainly includes teachers, although some may take exception to the seemingly pessimistic descriptions applied to them by Fullan (1979, 1981).

It appears that certain pre-conditions are necessary for change to take place. Also, when change in social organizations does take place, certain specific processes become involved.

Hoyle (1969) cites the work of Chin in identifying three broad categories of strategies employed in planned organizational change. These are: (1) power-coercive strategies "based upon the use of power to alter the conditions within which other people act by limiting alternatives, shaping the consequences of acts and by directly influencing action" (p. 391); (2) normative-re-educative strategies which make "use of direct interventions based upon a theory of change and applied to individual behaviour in small groups" (Hoyle, 1969: 392) who seek to improve their condition by solving problems which have been identified through a process of self-study; and (3) empirical-rational strategies based upon "an intellectual appeal through the demonstration of the greater effectiveness of some new idea or practice over existing ones -- linking innovative practices with research and development often using consultants to establish the link between knowledge and change" (Hoyle, 1969: 392).

It is presumed that these groups of strategies are not mutually exclusive and, in fact, best practices may be arrived at through combining aspects of all three groups.

In an address to the Saskatchewan Teachers' Association, Young (1979) identified four elements which constitute the change process: (1) the identification of needs; (2) the selection of a solution to satisfy perceived needs; (3) the implementation of the solution; and (4) the evaluation of the process to determine if and to what extent change has taken place. An essential assumption of Young's model is that teachers must "own" the process by sharing in all stages, and fully taking part in decision-making.

Fullan (1981) adds an important dimension when he states that "Implementation consists of alterations from existing practice to some new or revised practice ... in order to achieve certain desired student learning outcomes" (p. 10). In discussing implementation, most authors ignore the possible effects of change on pupils and concentrate their attention on what happens to or is intended for teachers. Indeed, Fullan (1981: 13) states that the implementation process frequently ignores people in general (their behaviours, beliefs, and skills) in favour of things (such as regulations and materials). It is this oversight, he claims, which frequently leads to implementation failures. Although students are not the immediate target group in a change process, if it cannot be shown that they have benefitted in some way, then one must question the success or rationale for the whole attempt at implementation.

Grieve (1980) brings a fieldworker's perspective to the issue of curriculum change when he identifies the school building principal and the "advocate of change" as being of central importance. The principal "is the key person in implementation" (p. 49), and the advocate of change "must be viewed as competent, knowledgeable of the school situation, and supportive" (p. 48).

According to Grieve (1980), the elements of implementation comprise: (1) the communication network existent in the district; (2) the predominant view of the role of the teacher; (3) the degree of acceptance and participation by teachers; and (4) the degree of continuity and coherence of the process (p. 44). Grieve particularly stresses the importance of the congruence between the proposed change and the "felt values" of teachers (p. 50).

Common (1980) analyzed 25 studies on implementation and arrived at five basic questions which must be addressed in order to understand the process of curriculum implementation. These questions relate to: (1) the curriculum - its complexity, clarity, and practicality; (2) the agents - teachers, and the "manager of the implementation process" (p. 6), and (3) the receiving organization - its acceptance of and capability in accommodating change. These first three items are termed "the elements of the curriculum implementation process," and all three are involved in item (4) the process of curriculum implementation - essentially planning involving the three elements given above. Item (5) relates to outcomes of the implementation process - an assessment to determine the extent to which the adopted curriculum has moved from its "fidelity state" to one of "mutual adaptation" (p. 12).

In an article titled "Inservice education and school change," Wolf and Miller (1978) discuss strategies for change based upon the extreme alternatives of "grandeur and gradualism" (p. 134). In favouring a gradualist approach, Wolf and Miller developed their own style of working and labelled it "Systematic ad hocism" (p. 137). They define this as "planning-into-action" not "seat of the pants" planning (p. 137), and note that it also is a process of mutual adaptation. They identify four attributes of systematic ad hocism: (1) it has a map rather than an itinerary; (2) it is long range; (3) it is adaptive; and (4) it is value-based (i.e., process helpers have positive convictions concerning the value of the proposed changes) (p. 140).

Certain elements of the change or implementation process are common to several of the models presented above. In selecting preferred elements, one is influenced not only by the frequency and strength associated with their identification, but also by a personal commitment to a particular set of values and modus operandi. It is with these comments in mind that, in this study, preference is given to an approach to implementation which is:

1. eclectic - drawing from several sources, as well as from personal experience;

2. teacher-centred - in that the teacher is regarded as of central importance;

3. sensitive to providing ultimate benefits to pupils;

4. cognizant of the key role of principals;

5. accepting of the change agent or implementation manager role; and

6. sensitive and adaptable to local conditions.

The next section will examine problems which have been identified as common to implementation projects.

Problems of Implementation

In an article titled "School focused in-service education in Canada," Fullan (1979) claims that:

> Research has shown two related facts. First, that actual implementation rarely occurs in the sense of numbers of teachers putting a given program into practice. Second, that implementation is <u>multidimensional</u> in which those responsible for curriculum change have been concerned with some dimensions, and neglectful of others (p. 10).

Fullan's (1979) investigation of the literature led him to note, among other negative findings, that:

1. one-shot workshops are widespread and ineffective;

2. topics are frequently selected by people other than those for whom the in-service is intendend;

3. follow-up support for using ideas and practices experienced in in-service occurs in a very small minority of cases;

4. follow-up evaluation of in-service programs occurs infrequently;

5. in-service programs rarely address the different individual needs of participating teachers;

6. the majority of programs involve teachers from different schools with no recognition of the impact of the positive and negative factors within the organizational systems into which they must return and use the ideas from the program ... there is an absence of structural support (time, resources, etc.); and

7. there is a profound lack of any conceptual basis for planning and developing the nature of in-service programs.

Werner (1980) also commented on the failure of many program implementation projects, citing discrepant "implied procedural and substantive beliefs" (p. 54) held by the various groups involved in a project (teachers, administrators, developers, and others). In support of this argument, Werner quotes from Downey's (1975) assessment of an Alberta Social Studies implementation program wherein it was noted that scholarship, technical excellence, and classroom expertise were all ineffective in promoting the new program unless teacher personality and disposition favoured the program intents.

The question of implementation was addressed at a conference held at the University of British Columbia in 1979. In an address to that conference, Dawson (1979) proved to be a very strong teacher advocate. Dawson noted that "implementing successful professional development activities is a difficult task" (p. 23), and gave warning of three areas of danger. In particular, he warned against imposing a program on teachers, thereby ignoring their view of reality. Secondly, he noted that teachers will reject top-down pressure (power-coercion) which does not allow for dialogue of teachers with resource personnel. Finally, he was critical of implementation programs which fail to develop a sense of commitment, mutual support, and community among the participants (pp. 24-25).

Skilbeck (1975) stated the concept and the case for school-based curriculum development even more strongly. Skillbeck listed six claims for school-based curriculum development, including the statements that:

> The curriculum is, for the learner and the teacher, made up of experiences; these should be experiences of value, developed by the teacher and learner together from a close and sympathetic appraisal of the learner's needs and his characteristics as a learner (p. 90).

And:

> Teachers, if suitably trained, can act effectively as curriculum developers, but part of the necessary support system for school-based curriculum development is an extensive in-service education program whose main features are only now beginning to be worked out (p. 91).

Skilbeck acknowledges that curriculum decision-making is complex in any national system, and he does not preclude the involvement of others than teachers and pupils in the process. He maintains, nevertheless, that the case for school-based curriculum development is "a strong one" (p. 92).

Young (1979) also highlighted the central role of the teacher in a paper titled "Inservice education: a guide to effective practice." He warned that "Any study of inservice education of teachers must recognize that teachers are adults, many of whom are in mid-career or later" (p. 2). But he also noted that "change is a process with identifiable components and that success in the effort depends to a large degree on the relationship that exists between the promoter of inservice education and the receiver" (p. 2).

This study, in seeking best ways to effect an implementation successfully, will attempt to take into account the areas of concern and warning noted above. More positively, advice has been sought which identifies processes that have been associated with successful implementation programs.

Factors which assist Implementation

Several investigators have identified factors which are positively associated with programs designed to implement educational innovations. In addition, some authors have conducted quite extensive reviews of the literature in order to distill most promising practices. This section will present recommendations from papers and studies which appear to be relevant to the particular program reported on in this study.

In a paper which provides "a set of factors ... related to effective or ineffective implementation," Fullan (1979 (a)) cautions that:

> Despite the need to develop practical guidelines, it is extremely difficult to be practical without becoming misleading, simply because the problems of implementation cannot be entirely resolved by following a set of procedures. The best we can do is devise a set of guidelines which identify the things systematically to be taken into account in relation to the particular problem at hand (p. 2).

This caution notwithstanding, in 1981 Fullan and Park produced a comprehensive resource booklet on curriculum implementation. In the booklet, factors influencing implementation, possible strategies, and recommended pre-implementation and implementation activities, are identified. These are summarized in Table 1 (Fullan and Park, 1981: 37) reproduced here.

TABLE 1. Pre-implementation and Implementation Activities*

Factors	Pre-Implementation Activities	Implementation
1. Multiple curriculum guidelines	-decisions to sequence	-reviewing sequence and reacting to new guidelines
2. Board and community support	Initial endorsement	-knowledge of progress
3. Time line and monitoring	-setting time line and agreeing on evaluation and information-gathering procedures	-revising time line, gathering and using information to monitor implementation
4. Clarity and need for change	-initial specification	-continuous clarification
5. Quality and availability of materials	-initial inventory	-additions, further development
6. Principal role and support	-orientation training	-periodic in-service, follow-up to see how principal is carrying out his/her role
7. Consultant role and support	-orientation training	-periodic in-service, follow-up to see how consultant is carrying out his/her role
8. In-service for teachers	-orientation training	-regular in-service, follow-up and support for teachers in defining new practice
9. Teacher-teacher interaction	-participation in discussions about need for change	-identifying implementation problems and needed help
10. Use of external resources	-inventory of resources, involvement in orientation	-use of external resources

*From Fullan and Park (1981: 37)

Also, Fullan and Park (1981) identified six groups of people involved in implementation. These are: (1) teachers; (2) principals; (3) trustees; (4) parents; (5) students; and (6) board administration (pp. 26-31). From comments made elsewhere (p. 43 and item 7 in Table 1), it is clear that Fullan and Park (1981) accept the role of consultant and probably include this role under board administration (even though the consultant may be an external appointment).

According to Young (1979), the role and characteristics of the curriculum consultant are crucial to the success of implementation projects. In a section dealing with the helping relationship between "helper" (consultant) and "client"

(teacher), Young states that it is "the world view and the general attitude that the helper brings to the relationship that accounts for most of the differences in results" between good and poor helpers (p. 7).

Other factors which Young (1979) considers the successful consultant brings to the helping relationship include: (1) equality - viewing teachers as equals; (2) other-centredness - empathy and respect for teachers; and (3) trust and belief - in the teacher's intents and capabilities (pp. 7-9).

Young (1979) also emphasized "twelve guidelines to effective inservice education practice" (pp. 9-13): (1) voluntary participation by teachers in inservice activities; (2) the starting point of inservice activities should be determined by teachers' requirements, needs, and preferences; (3) positive change must be fully supported by the school organization; (4) work, education, and leisure activities of teachers should be combined; (5) planning decisions should be arrived at through the collegial relationship of teachers and consultant; (6) plans should treat participants as members of an intact group; (7) inservice activities should provide awareness, knowledge and conceptualization, skill training, and planning for transfer; (8) skill training should incorporate theory, demonstration or modelling, practice, and feedback; (9) emotional support and on-site coaching should be continued following completion of inservice; (10) the plan for inservice should extend over time (30-40 hours of intensive training, and three to five years of implementation activities); (11) the implementation process should be re-cycled as necessary; and (12) teachers should be provided with the opportunity for professional and personal growth (pp. 9-13).

An important facet of the relationship between teachers and the consultant is the feedback provided by the consultant following teaching performance by the teacher. Lehner (undated) outlines 11 factors "which may assist us in making better use of feedback" (p. 1). Feedback, for example, should be focused upon: (1) behaviour rather than the person; (2) observation rather than inference; (3) description of an event rather than judgement; and (4) what is said rather than why it is said (pp. 1-3). "In short," Lehner concludes, "the giving (and receiving) of feedback requires courage, skill, understanding, and respect for self and others" (p. 3).

In an address aptly titled "So you want to implement a new curriculum: the role of the university," Dawson (1980) observed that "Any professional development model which perpetuates the dehumanization of teachers, which views teachers as docile, passive receptors of reality (someone else's reality) will be rejected by teachers" (p. 24). He states that "A potentially powerful model for professional development would include the means for teachers and resource personnel to dialogue with each other as equals, without the teachers being subordinated to the leader" (p. 24).

Dawson (1980) presents such a model (p. 28) in a table derived from the work of Joyce (1979). This table is reproduced here (Table 2), with added notes culled from a paper by Joyce and Showers (1980).

Table 2. Components of Inservice Activities and Levels of Impact*

Levels of Impact	Components of Inservice Activities						
	Presentation of Theory[1]	Skill Modeling or Demonstration[2]	Practice in Classroom Setting[3]	Structured Feedback[4]	Open-ended Feedback[5]	Coaching for Application[6]
Awareness	To some extent	Considerable impact	Considerable impact	Considerable impact	Uneven impact: depends on particular teacher	Considerable impact if other components used as well
Concepts Knowledge	To some extent	Considerable impact				
Principles Skills	Little or no impact	Some impact				
Application Problem sol.	Little or no impact	Limited impact	Some impact	Reasonable impact		
Teachers achieving all 4 levels of Impact	10%	10%	25%	35%		90%

*Reproduced with slight modifications from Dawson (1980: 28).

NOTES: to accompany Table 2.

1. The presentation of theory is important when combined with other components.

2. Teaching skill demonstrations are important in any program aimed at the acquisition of complex skills and transfer to the teaching/learning situation: This component has good impact where the tuning of style is involved.

3. Practice in the teaching/learning setting is useful in acquiring skills and strategies: Considerable impact once the awareness of knowledge level has been achieved.

4. Structured feedback is necessary in many areas of teacher behaviour if changes are to be maintained, and requires use of observation systems for fine tuning.

5. Open-ended feedback (an extension of #4) probably best accomplishes an awareness of teaching style, and "readies" teachers for more extensive and directed training activities.

6. Coaching for application implies helping teachers to analyze the content to be taught and teaching strategies to be used: Also, helping teachers to adopt and adapt to teaching materials.

Amongst the sources examined in this section, stronger emphasis is given to certain guidelines by some authors, but not by others. Similarly, some authors omit the mention of guidelines included by others. There are, however, virtually no contradictory opinions expressed concerning any of the guidelines mentioned. The work of Fullan (1979 (a)) and Fullan and Park (1981) is particularly impressive and was given considerable weight in the conduct of this study.

Also, Dawson's (1980) explication of Joyce's (1979) work (in Table 2) is particularly useful in showing the relationship between "levels of impact" and "components of inservice activities," and selecting these to the extent to which implementation may be anticipated. This work, too, served as a guide in preparing implementation plans for this study.

The next section will review criteria and processes for use in the assessment of the extent to which implementation programs are successful.

Assessment of Implementation Processes

It is generally recognized that significant widespread change in educational practice is usually a slow process. It has been estimated that the complete diffusion of a practice into a large educational system (such as a province or state) may take from 25 to 50 years (Cocking, 1951; Mort, 1955; Rogers, 1962; Ross, 1951). Part of the reason for the uncertainty in estimation of this time factor is the difficulty associated with assessment of the implementation process. This section will examine criteria and processes which have been used or suggested for implementation assessment projects.

Evaluation in education is often broadly divided into formative and summative functions (Scriven, 1967). Formative evaluation is typically employed in seeking ways to improve practice; summative evaluation is employed in making decisions such as whether to continue with or cancel a particular practice or program. Both forms of evaluation are essential components of any implementation enterprise.

In order to arrive at formative or summative decisions, research is often employed. In an article titled "Evaluation as illumination," Parlett and Hamilton (1976) identify two basic research paradigms: (1) "the classical or 'agricultural-botany' paradigm which uses a hypothetico-deductive methodology derived from the experimental and mental testing traditions in psychology"; and (2) the 'social-anthropology paradigm' which relates "to social-anthropology, psychiatry, and participant observation research in sociology" (p. 85).

Parlett and Hamilton (1976) note the recent resistance to the agricultural-botany paradigm, and point out its unsuitability for use in the evaluation of many educational situations. Amongst other shortcomings, Parlett and Hamilton claim that the classical paradigm "divorces the study from the real world"; "may have a deleterious effect on the project itself"; imposes "artificial and arbitrary restrictions on the scope of the study"; "tends to be insensitive to local perturbations and unusual effects"; and "often fails to articulate with the varied concerns and questions of participants, sponsors and other interested parties" (pp. 86-88).

The alternative which Parlett and Hamilton (1976) offer is "illuminative evaluation and the social-anthropological paradigm" whose "primary concern is with description and interpretation rather than measurement and prediction" (p. 88). The aims of illuminative evaluation are:

> To study the innovatory project; how it operates; how it is influenced by the various school situations in which it is applied; what those directly concerned regard as its advantages and disadvantages; and how students' intellectual tasks and academic experiences are most affected. It aims to discover and document what it is like to be participating in the scheme ... to discern and discuss the innovation's most significant features, recurring concomitants and critical processes .... It seeks to address and illuminate a complex array of questions (pp. 88-89).

The methods of illuminative evaluation are not standardised, but form a general research strategy which is adaptable and eclectic. Simply stated, there are three stages within the strategy: (1) observation, (2) inquiry, and (3) explanation. The objective is to establish an "information profile" based on many kinds of observation, interviews, questionnaires, pencil-and-paper tests, and various background and documentary sources (Parlett and Hamilton, 1976).

According to Fullan and Park (1981), "it is generally accepted that there are three stages to the provincial curriculum process: guideline development, implementation, and review/revision" (p. 59). Program reviews may be conducted for two purposes: (1) to evaluate the extent and process of implementation in order to improve the procedures (formative evaluation), and (2) to assess the program in order to revise the policy for the future (summative evaluation) (pp. 59-60).

Fullan and Park recommended that four features should be built into the program review process: (1) a broadly representative review team coordinated by the Ministry of Education; (2) measures of the extent of the implementation, the quality of the guideline, the availability and quality of materials in relation to the program, and the availability and quality of professional development resources in the local region; (3) examination of both short-term and long-term purposes; and (4) close cooperation with Regional Professional Development Committees and the Regional Curriculum Council (p. 60). Since Fullan and Park were responding to a contract with the Ontario Ministry of Education, some aspects of the recommendations given above may not be generally applicable (particularly item 4).

In 1977, Fullan and Pomfret conducted a review of the current research on curriculum and instruction implementation. Their studies resulted (amongst other things) in the identification of a number of factors, organized into four segments, and empirically derived from the studies analyzed. Fullan and Pomfret considered that these factors represented "a step in (the) direction" of a theory of implementation (p. 368).

Fullan appears to have refined his work in this area and, in 1981 (Fullan and Park), he extended the number of factors affecting implementation to twelve, while maintaining the basic organization into four segments. An overview of the elements of curriculum implementation, presented in schematic form, is reproduced here (Figure 1). This model appears to be a useful conceptualization for the analysis and assessment of the implementation process.

Chapter III. BACKGROUND TO THE PROJECT AND PROCEDURES

Background to the Project

In the Fall of 1979 the Pitt Meadows elementary school staff, under the leadership of principal John Parry, conducted an internal evaluation of the school program. In February, 1980, an external evaluation team comprising local administrators conducted a second assessment of the Pitt Meadows school program. Following receipt and study of the reports of these two evaluations, and subsequent to discussion and agreement, the staff and principal decided that special emphasis would be given to improving the school's physical education program in the year 1980-81. The nature of the improvement was to be the implementation of a program which conformed to the precepts contained in the 1975 provincial curriculum guide for elementary physical education.

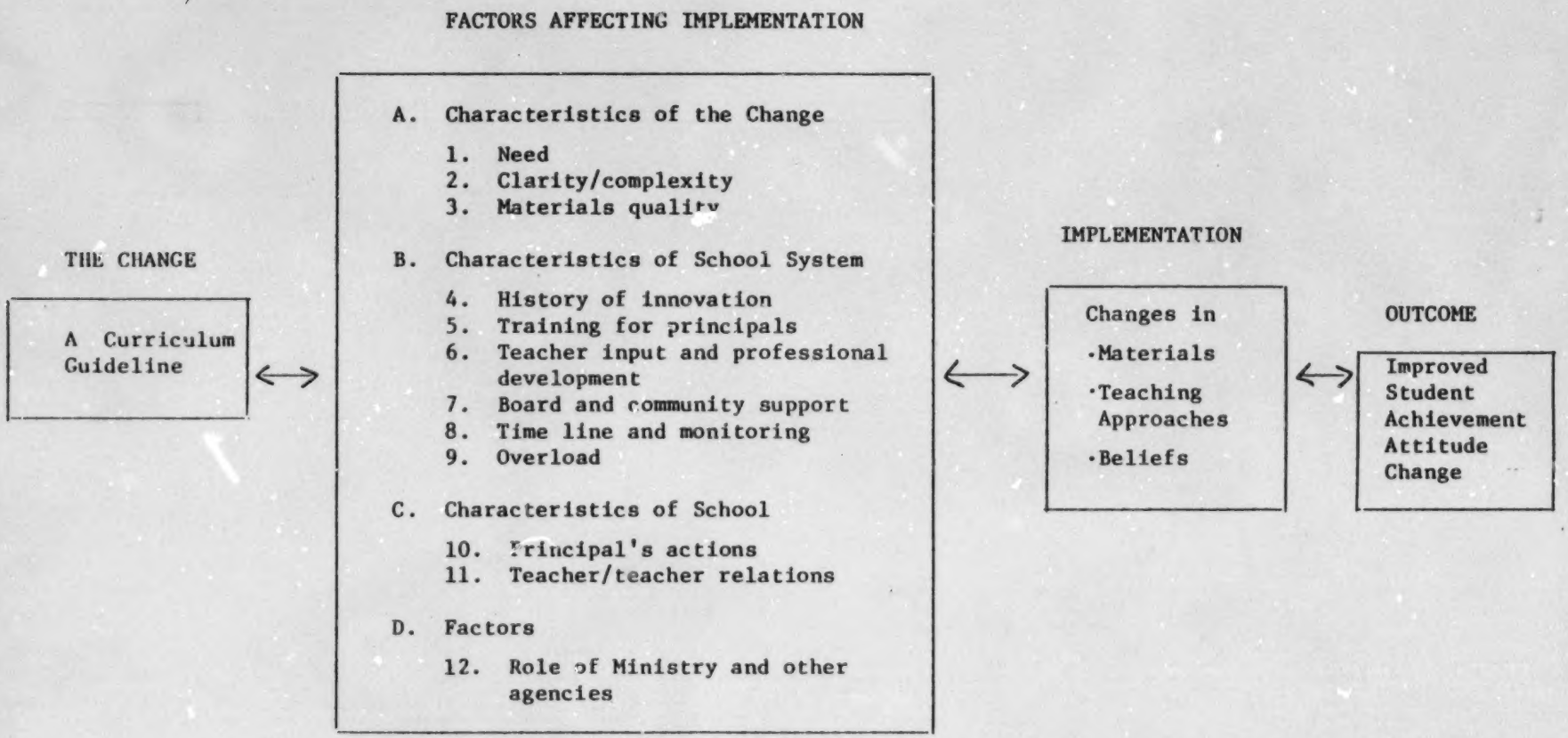
In complying with this staff decision, the principal contacted the Field Development Office, Faculty of Education, the University of British Columbia, and arranged for the services of Dr. Peter R. Moody, School of Physical Education and Recreation, to assist in staff development in the area of physical education. The initial details of this arrangement were arrived at through direct contact between Mr. Parry (hereafter referred to as the principal) and Dr. Moody during June and July, 1980 (and, subsequently, with the school staff). Prior authorisation for a school project involving external personnel was obtained by the principal from the Maple Ridge school district central office.

In the early discussions between the principal and Dr. Moody, it was determined that Dr. Moody's role vis-à-vis the Pitt Meadows elementary school physical education program was that of a consultant, and this term is used to refer to his position and role. Also, because of the consultant's obligatory and prior commitments to the university, it was necessary to determine and prescribe the extent of his involvement with the school. It was agreed that, in addition to any time required for the acquisition or preparation of materials and other resources, the consultant would make 20 day-long visits to the school for the purpose of working directly with the school staff, principal, and pupils.

The consultant's expenses and honorarium were met through a cost-sharing arrangement between the school district and the University of British Columbia. (Such arrangements are possible between the field development offices of the three major provincial universities and any school district classified by the Ministry of Education as outside the metropolitan areas of the universities - the Maple Ridge district is so classified.)

Figure 1. An Overview of Elements of Curriculum Implementation

(Fullan and Park, 1981: 23)



Procedures

It should be made quite clear that the prime goal of the project reported on here was to implement a physical education curriculum which represented an educational innovation to the cooperating teachers. Thus, where possible, all other aspects of the project were controlled to the extent that they helped or hindered the prime goal. For this reason, evaluative procedures were adopted (or adapted) which were relatively unobtrusive and non-threatening to teachers, and required little of their non-teaching time. For example, plans to administer an extensive second questionnaire to teachers in June, 1981, were cancelled because of incipient negative reactions from teachers. The previously planned-for semi-structured interview conducted with small groups of teachers was used to gather information originally scheduled for inclusion in the cancelled questionnaire.

Table 3 presents a summary of the procedures employed in this study. Brief, explanatory notes relating to the table follow.

Sources

1. Consultant - refers to Dr. Peter R. Moody in his association with the Pitt Meadows elementary school physical education program (see Appendix A for demographic data).

2. Principal - refers to Mr. John Parry as principal of Pitt Meadows elementary school (see Appendix B for demographic data).

3. Teachers - refers to the thirteen generalist classroom teachers (i.e., excluding specialist roles) who taught physical education at the Pitt Meadows elementary school. One of these teachers taught physical education to the music specialist's class, as well as her own (see Appendix C for demographic data).

4. Pupils - refers to the approximately 45 grade three and 45 grade seven pupils enrolled in classes at Pitt Meadows elementary school. The only pupils omitted from test measures were those absent on the days of testing, or excused from physical test items for medical reasons.

Objectives

The items referred to in Table 3 are drawn from the established internal objectives of the project listed below (also, see p. 2).

1. To ensure that all pupils take part in at least three periods of physical education each week (to be phased in by December 23, 1980). Subsequently, to extend this number to four or five periods per week.

2. To improve the quality of instruction which children receive in physical education.

3. To increase the number, variety, and propriety of the activities in which children engage during physical education lessons.

Table 3. Summary of Data Sources, Instrumentation, Data Analysis, and Time Schedule

Source	Objectives	Instrument	Administration and Analysis	Time Schedule
1. consultant	#1; #2; #3; #6; #7	– participant observation notes	– content analysis	September - June
	#2; #3; #4; #5; #6; #7	– notes on visits and activities	– content analysis	September - June
	#2; #3; #4; #6; #7	– semi-structured interview	– external interviewer -content analysis of transcribed recording	June
2. principal	#1 - #8	– supervisory notes and reports	– content analysis	September - June
3. teachers	#1 - #7	– questionnaire	– totals	January
	#1 - #7	– semi-structured group interviews	– external interviewer -content analysis of transcribed recordings	February
		– semi-structured small group interviews		
3. pupils	#2; #3; #5; #7	– B.C. physical education assessment instruments:	– class means	January and June
		a. Attitudes towards P.E.	in-class testing	
		b. Knowledge about P.E.	in-class testing	
		c. Motor ability	testing team	
		d. Physical fitness	testing team	

4. To assemble a suitable bank of materials and resources for school use.

5. To assess the results of allocating an increased allotment of time to physical education.

6. To assist teachers in developing and expanding their knowledge and understanding of physical education (including substantive content and appropriate teaching styles or strategies).

7. To maintain and/or improve positive attitudes toward physical education on the part of the pupils, teachers, adminstrators, and parents.

8. To ensure full adoption of a quality daily physical education program through the commitment of teachers.

Instruments

1. Participant observation

As principal investigator and project director for this study, Dr. Moody filled the dual role of participant observer and consultant. His notes and records were consulted for data concerning process and product related to the project objectives. Also, as the author of this report, his experiences and inferences derived from those experiences will be incorporated into the report.

2. Semi-structured interview

In order to obtain an insight into teacher, principal, and consultant opinions concerning the project, semi-structured interviews were conducted by a research assistant (see Appendix D for details). Interviews were conducted with: he consultant in June, 1981; the principal in June, 1982; the primary teachers as a group, and the intermediate teachers as a group in April, 1981; and with pairs of teachers according to grade level taught (i.e., teachers teaching the same or adjoining grade levels) in June, 1981.

3. Teacher questionnaire

Teachers completed questionnaires (see Appendix E) in order to provide demographic data, measures of attitudes toward physical education, opinions concerning aspects of their program, and factual data related to their physical education classes.

4. Supervisory notes and reports

In his role as principal, Mr. Parry was required to observe, supervise, and report on the operations of his school. His notes and reports were examined for relevant data.

5. B.C. physical education assessment

Details concerning the instruments used in this assessment are contained in British Columbia Physical Education Assessment: General Report (Carre, 1980). The instruments comprise:

(a) Student attitude toward participation in physical activity inventory;

(b) Student knowledge and understanding of physical education questionnaire;

(c) Student motor ability as measured by the side slide and the wall pass;

(d) Student fitness as measured by a timed run (nine minutes for grade three; 12 minutes for grade seven), the flexed arm hang, and the standing long jump.

Administration and Analysis

1. Notes and reports

Where reference is made to instrumentation by use of notes or reports it is implied that these were maintained throughout the life of the project. Such notes are a requirement of the principal's role, and form an essential component of the consultant's data base for responsive decision-making.

2. Semi-structured interviews

Interviews with the consultant and groups of teachers were audiotaped (with permission of the interviewees) and transcribed for later content analysis. At the request of some teachers, the small group interviews were not audio-taped, although the interviewer made hand-written notes. Notes instead of tape-recordings were also used during the interview with the principal.

All interviews made use of semi-structured protocols (see Appendix D), but free comment was also encouraged. The teacher and principal interviews were conducted during school hours, in the school staffroom. Each interview lasted approximately one hour.

All notes and transcriptions were subjected to content analysis.

3. Questionnaires

The teacher questionnaires were obtained from an evaluation of the Action Nanaimo physical education demonstration project (Sinclair, Mosher, Schutz, Moody, and Appleby, 1978) and slightly modified for use in this investigation (see Appendix E). Teachers completed the questionnaires anonymously and submitted them to the consultant. The questionnaires were subsequently tabulated and summarized, showing group means and standard deviations.

4. Pupil tests

The pupil test items, procedures, and scoring were adopted from the General Report of the B.C. provincial learning assessment program (Carre, 1980). The attitude and knowledge tests (both using pencil and paper) were conducted by the class teachers during regular lesson time. The motor ability and physical fitness tests were conducted by an external team who gained their testing knowledge and experience as field members of the 1979 provincial learning assessment program (Carre, 1980). The results of these tests have been expressed as class means and standard deviations and are available in detail in a report available through the Educational Research Institute of British Columbia (Parry, 1982).

Time Schedule

1. Consultant

Working notes and anecdotal comments were maintained by the consultant from the date of the first visit to the school until the end of the 1980-81 school year. He was interviewed in June, 1981.

2. Principal

The principal's supervisory observations, notes, and reports also were maintained throughout the school year, 1980-81. He was interviewed in June, 1982.

3. Teachers

The teachers completed a 38-item questionnaire in January, 1980. Original plans required re-administration of the questionnaire in June, 1980. With the closing out of the school year, however, teachers expressed apprehension and reluctance at the thought of completing "yet another of a long list of administrivial chores." Thus, a second questionnaire was not administered.

Group interviews were conducted in February, 1981. Small group interviews were conducted in June, 1981.

4. Pupils

All pupils in all grades were tested in the third week of January, and re-tested the first week of June, 1980.

Chapter IV. RESULTS AND DISCUSSION

Introduction

The purpose of this chapter is to assess the extent to which each of the eight internal program objectives has been achieved as of July, 1981. An examination will be arrived at through examination of the data summarized in Table 2. Each of the objectives will be examined in turn.

Objective 1

To ensure that all pupils (14 classes) take part in (a) at least three periods of physical education each week by December 23, 1980, and (b) four or five periods each week by June 1, 1981.

Results. a. The teacher questionnaire, administered in early January, 1981, indicated the number of physical education periods per week as follows: Two classes at five periods; five classes at four periods; six classes at three periods; and one class at 2-3 periods.

Also, according to the questionnaire, the duration of each class was: One class (intermediate) at 40 minutes; 12 classes at 30 minutes; and one class (½-day kindergarten) at 20 minutes.

These findings are supported by the principal's examination of teachers' daybooks, and by the school time-table (which scheduled all classes for a minimum of three periods per week).

b. Again, according to the principal's examination of teacher daybooks and individual class timetables, all classes received five periods of physical education each week. This blanket assessment is not completely supported by other data, however.

It is accurate to say that daily physical education was timetabled for all classes, but the consultant's anecdotal notes indicate that three teachers frequently cancelled lessons for various reasons. Thus, although they maintained the frequency reached in December, they did not consistently achieve between four and five periods weekly by June. Further evidence of this failure on the part of two teachers in particular (both at the intermediate level) to achieve the stated objective was obtained from the small-group interviews. Yet further evidence of non-conformance on the part of intermediate classes was provided by the teacher coordinator for the intermediate grades.

Discussion. From examinations of various transcripts and notes, it is apparent that some teachers were unclear concerning the definition of quality daily physical education which had been offered, discussed, and apparently accepted at the beginning of the project. Thus, although their classes received three instructional and two fitness activity periods each week, some teachers did not consider they had a daily physical education program because not all periods were instructional. This issue caused some confusion in obtaining clear information concerning lesson frequency, since such teachers claimed that their classes received three rather than five weekly periods of physical education.

Whether the definition of quality daily physical education assumed by this project is generally acceptable to school physical educators is arguable, but since the definition had been fully discussed and agreed to by participants in the project, it is disturbing to find this later confusion and points to a need for a definition which is more clear, more acceptable, or more frequently reinforced as an objective throughout the project.

Using the offered definition as the criterion, it was possible for all classes to achieve this objective. It is probably quite accurate to state that part (a) of this objective was achieved by all teachers. Part (b) of the objective was probably achieved by 11 of 14 classes - or 78% success.

To point up the significance of this achievement, one must recall that in the preceding year, most classes had received two periods of physical education weekly. It is also worth noting that, in order to make it possible to achieve this objective, certain timetable arrangements were necessitated which caused classes to share the gymnasium for fitness activities. The fact of sharing appeared to be welcomed by most teachers, both because of the additional opportunities presented their pupils, and for the enjoyment they derived from participating in such physical activity as the Health Hustle.

Objective 2

To improve the quality of instruction which children receive in physical education.

Results. In June, 1981, the principal commented that "it is difficult to empirically measure" this objective. Basing his assessment, however, on frequent observations of teachers while teaching physical education, and on discussions with the consultant and the school's designated teacher coordinators for physical education, the principal noted the following improvements in or results of teacher behaviours:

- more time on task by students;
- greater participation both physically and cognitively by students;
- greatly improved planning of activities;
- greater use of problem solving techniques was evident in most teachers. (Principal's notes)

The principal confirmed this positive assessment during an interview when he claimed a "90% improvement" in the quality of instruction, also noting an improved atmosphere in the gymnasium, and improved quality in pupil movement (Principal interview).

The consultant also commented that "teachers generally became more skillful in conducting their classes," although noting that, for some teachers, the teaching styles he modelled served to confirm skills already possessed by those teachers rather than being innovations for them. On a scale of one (low) to five (high), the consultant rated the quality of teaching at three (pre-project) and four (post-project). This opinion was based upon bi-monthly observations of most teachers

while teaching physical education (Consultant interview).

The consultant's anecdotal notes and reports to teachers following his visits further confirm that improvement in the quality of instruction had taken place.

The teachers themselves generally considered that the quality of their instruction had improved. In response to the question "Do you think ... there has been any improvement in ... (your) instruction (throughout the project)?" one teacher answered:

> Yes, I have. I didn't have enough ideas -- I know the background, but I didn't have any ideas how to do things in different styles. Now my classes have a wider range of activities. (Group interview, Frebruary, 1981).

Another teacher summed up the situation very well and placed it in a particular perspective by commenting:

> I think mine has improved, in the sense that if there were time and energy put into designing a coordinated math program within the school ... I think my instruction will improve there, too. (Group interview, February, 1981).

One teacher, on the other hand, considered that the quality of his instruction had not changed since:

> For seven years you've been forced to teach p.e. anyways, in my class as well as others. You have to keep a high standard, otherwise your p.e. program falls apart. (Group interview, February, 1981)

During the June interviews, various teachers noted that the implementation program had: Created a more organized program; increased teacher competence and willingness to use gymnastics apparatus; reinforced skills learned during preservice preparation; helped improve teacher self-confidence; helped teachers to obtain improved quality in pupil performance (especially in gymnastics and dance). One teacher claimed that the quality of her instruction had "improved fantastically" (Small group interviews).

Not all teacher comments were positive, however. One teacher objected to pupil-centred teaching, and styles which stressed pupil creativity: These were considered to be wasteful of pupil time (Small group interviews, June, 1981).

Discussion. The principal's comment that "There is no doubt in the minds of all concerned that this objective has been achieved" (Principal's notes) is probably quite accurate, but with varying degrees of truth applied to individual teachers. It is likely that competent, qualified, and experienced teachers are quite capable of learning new teaching skills if they so wish. It is not teachers' potential to change and improve which is in question so much as their desire to change and their acceptance of the proposed change.

In the case of two teachers, styles of teaching changed very little if at all, thus their teaching behaviours were inappropriate for certain innovative activities, and in the teaching of those activities it may be said that the quality of instruction deteriorated. In teaching activities with which they were familiar (e.g., games), they did successfully incorporate improved class organization techniques and arrangements.

A few teachers appoached change very slowly, looking for reassurance that the proposed change was beneficial to their pupils, and that they could acquire the necessary knowledge and skills to be effective. In general, it may be said that primary teachers appeared to be more receptive than intermediate teachers in accepting suggestions and coaching to improve the quality of their instruction. It is interesting to note that responses to the teacher questionnaire (January, 1981) showed that more than anything else teachers wanted interaction with and feedback from the consultant concerning their teaching performances.

From the evidence gathered, and attempting to assess improvement for all teachers as a group, this objective may be said to have been achieved with 70-75% success.

Objective 3

To increase the number, variety, and propriety of the activities in which children engage during physical education lessons.

Results. According to the internal school evaluation conducted in 1979, Pitt Meadows school had need of "a varied program." This observation was confirmed by the external evaluation report (1980) which noted that "the emphasis on dance and gymnastics as suggested in the Ministry of Education Guide (1975: 25) is not as extensive as it should be" (p. 1).

In response to the January, 1981 questionnaire, six teachers mentioned a balanced or more varied program as one of the best features of the project. During the small group interviews (June, 1981) most teachers mentioned that the balance of activities included in their lessons had improved.

In his notes, the principal commented that "Based on yearly planning sheets and teacher day books, this objective has clearly been achieved." The principal also noted "Much improved balance of planned programs among games, dance, and gymnastics."

Further evidence of this objective being achieved is provided in the consultant's notes and the curriculum materials used in the project. Although teachers used their own discretion concerning the extent to which they used the lesson resources provided by the consultant, all classes and teachers received demonstration and at least some follow-up lessons in games, dance (rhythmics, and creative dance and/or square dance), educational gymnastics (including movement education), track and field, and fitness activities. (Although not a part of this project, several classes also received swimming instruction and camping experiences.)

Discussion: The basis for achieving this objective was quite deliberate and structured. Since there was a need to coordinate the physical education programs of all classes in order to maximize the visits and efforts of the consultant, teachers agreed to follow the schedule proposed by the consultant. This schedule required classes to receive lessons in the activities mentioned above, in the first instance as demonstration lessons provided by the consultant, and subsequently as follow-up lessons to provide the teachers with practice and for the consultatn to team-teach in and observe in order to provide feedback to the teachers.

From the consultant's notes it is obvious that most teachers complied with teaching at least the minimum number of lessons requested. It is also obvious from the consultant's notes, however, that two teachers frequently failed to implement lessons as requested.

The justification for the selection of the particular lesson activities and materials used lies primarily in conforming with the Ministry of Education guide for physical education (1975). Details of lesson activities were chosen from materials approved for use in neighbouring school districts and subjected to scrutiny and acceptance by the consultant, based upon his judgement and following discussions with other experts in the field.

It is extremely difficult to assess the extent to which this objective was achieved. Undoubtedly, it is clear that the number and variety of activities engaged in by pupils was increased quite significantly for most classes (two primary teachers had established well balanced and varied programs prior to commencement of this project). The propriety of the selected activities rests with the judgement exercised by the consultant in the original selection and adaptation or development of materials, and teachers' skill in interpreting the materials to a level appropriate for their own pupils.

Objective 4

To assemble a suitable bank of materials and resources for school use.

Results. The principal states quite simply and unequivocably that "This bank now exists in a filing cabinet in the school" (Principal's notes).

In response to the January, 1981 questionnaire, four teachers mentioned "lesson guidelines" (i.e., prepared outline lesson plans issued to all teachers for each activity area) as one of the best features of the project. During the February, 1981, group discussions several teachers alluded to the benefit they derived from the various resource materials provided:

> There are books in our own library that are really good, and we have all those lesson plans plus other books that (the consultant) gave us on games - that was really good.
>
> I think it's helpful in that we have materials we didn't have before.

One teacher, although acknowledging the value of the resource materials, noted that it was necessary to adapt specific lesson plans in order to render them appropriate for her own pupils (Group interview, February, 1981).

According to the consultant's notes, resources were developed, or selected (with any necessary adaptations) from several sources, set into appropriate formats, and deposited with the school's coordinating teachers for disposal to the remainder of the staff.

Discussion. Curriculum materials for elementary school physical education abound. Materials generally available include theoretical and prescriptive texts, file-card systems, audio-visual materials, specific program materials (e.g., the Premiers Sports Award in British Columbia), and locally developed materials. In addition, the consultant had developed some materials.

In attempting to assess the extent to which this objective has been achieved, it is quite accurate to state that a bank of materials exists: The question which is not so easily answered relates to the "suitability" of the materials in the bank. Since it is beyond the scope of this study to determine what constitutes "best" or "most appropriate" curriculum materials, the claim for suitability rests upon the credibility of the authorship of the materials. Since the materials placed in the bank were selected for use based upon their acceptability to and widespread use by school district physical education coordinators in the province, and were further reviewed by the consultant, their suitability is held to be assumed.

Objective 5

To assess the results (as they affect pupils) of allocating an increased allotment of time to physical education.

Results. Table 4 summarizes results extracted from the January, 1981 teacher questionnaire. From the table it is seen that teachers considered that the daily physical education program had a generally positive effect upon pupil behaviour and gains in motor skills. Also, they considered that the program had a substantially beneficial effect upon pupil self-image and academic performance.

During the June, 1981 small group interviews teachers were asked whether they had noticed student improvements in the areas of attitude, skill development, and problem solving. Although two teachers found it "difficult" to formulate answers, it was generally agreed that pupil attitudes toward physical education had improved (although one teacher commented that children "always like physical education"). All teachers noticed improvement in skill development. It was specifically noticed that less skillful pupils showed improvement, and that improvement was shown in gymnastics and dance. Improvement in problem solving skills was commented on by approximately 50 percent of teachers.

The consultant noticed areas of considerable pupil improvement (notably in gymnastics skills and problem solving abilities, but also in knowledge and understanding) (Consultant interview and notes).

Table 4. Teacher responses to: "Of what benefit is the Pitt Meadows physical education program (or daily physical education) to your pupils?" (Teacher questionnaire)

Value	Number of responses for each item (N = 13)				
	Nutritional Values	Less discipline problems	Improved self-image	Improved acad. perf.	Gain in motor skills
Great 5		1	1		3
4		8	7	6	9
3	4	3	5	7	1
2	2	1			
Little 1	6				

Specific changes in pupil performance in cognitive, affective, and psychomotor domains are contained in the principal's report (Parry, 1982) and show mixed, but overall positive, results in all areas. The principal's own subjective judgement reflects a similar, although more favourable, assessment.

Discussion. Having noted the generally positive effects of the daily physical education program, it is important to acknowledge the principal's finding concerning academic subjects that "classroom and district administered tests in other subject areas have failed to indicate any deterioration in subject matter performance," in spite of the increased time allotment to physical education (Principal's notes). The principal's observation is supported by anecdotal comments made by teachers to the effect that their pupils performed better academically on days when they had physical education (Consultant's notes).

The consultant commented on the direct, positive relationship between teachers who appeared most receptive to and adept at implementing innovative styles and activities into their physical education lessons, and the performance and attitudes of their pupils (Consultant interview). His notes also reflect the surprise and pleasure of teachers who found that innovative indirect styles of teaching and activity areas such as educational gymnastics and creative rhythmics enabled even habitually "poor performers" to gain marked improvements in skill and attitude.

Overall, it seems fair to state that comprehensive assessments were made of the effects on pupils of an increased time allotment in physical education, and that the results of the assessments were generally favourable.

Objective 6

To assist teachers in developing and expanding their knowledge and understanding of physical education (including substantive content and appropriate teaching styles or strategies.

Results. Without setting formulized tests for teachers, it seems that the only evidence which can be offered here is subjective and anecdotal. Perhaps the earliest recorded indication of improved teacher knowledge and understanding is contained in the consultant's anecdotal notes, and in his weekly memos to teachers. For example, on November 20, 1980, the consultant observed seven teachers teach their classes and noted that three teachers seemed not to understand the substantive content of their lesson, whereas the four remaining teachers appeared to grasp the concepts of the content matter, even if their teaching methodology was at times inappropriate. Improvements were noted and recorded throughout the year for most teachers in most activity areas, with two notable exceptions (two teachers who seemed to avoid or quite misunderstand the underlying concepts of several of the activity areas).

These generally positive observations were reinforced by the consultant's memo to teachers (November 27, 1980) in which he told teachers, "To my eye and mind there are significant improvements in the children's performance and understanding in gymnastics." Similar comments, reflecting the teachers' own improved knowledge of activity areas, continue at frequent intervals throughout the year (Consultant's memos to teachers).

Although there are no pre-project data for direct comparison, it is interesting to note that by January 1981 (questionnaire), seven teachers stated they felt "adequately competent in teaching physical education" unassisted, whereas one was "undecided", and five did not feel competent. In answer to another question, two teachers made incidental comments to the effect that they enjoyed teaching physical education because they now knew "how and what" to teach.

During the June, 1981, small group interviews, two teachers stated that their "understanding of physical education" had not improved at all as a result of the project. All other teachers, however, claimed varying degrees of improvement in various areas. In addition, two teachers commented that the project had reinforced and reactivated knowledge previously gained in pre-service education.

In his notes, the principal commented "objective achieved" and "great gains in this area" for this objective.

Discussion. Although the statement for this objective lacked specificity, it represents an important component of the implementation process. If teachers are to adapt and adopt an innovation, they must understand it and know its essential elements. The evidence above indicates that, in general terms, teachers did become sufficiently knowledgeable and understanding of activities to be able to teach them to good effect.

As in previously discussed objectives, two teachers appeared to resist the acquisition of new knowledge and considered they had learned nothing. It is

quite probable that the teachers concerned had existing levels of knowledge of certain activity areas which were not surpassed by information offered by the consultant. It is unlikely, however, that this state applied to all activity areas and, in fact, when the relevant documents are consulted it appears that the teachers concerned rejected certain activity areas as being unsuitable educational enterprises for their pupils.

The principal's comments, although reflecting the general status for this objective, are too sweeping. It is probably more accurate to state that the knowledge and understanding of most teachers improved to practical and meaningful levels, thus enabling them to teach activities effectively.

Objective 7

To maintain and/or improve positive attitudes toward physical education on the part of pupils, teachers, administrators, and parents.

Results. Since all members of the Pitt Meadows staff (including the principal) took part in the original discussion and decision to embark on a program of quality daily physical education, it is perhaps safe to assume that most teachers and the principal had positive attitudes toward the project. These assumed positive attitudes are confirmed by the results of the January, 1981, questionnaire (see Table 5).

Table 5. Teachers attitudes toward physical education

Value		Number of responses for each item (N = 13)	
		Value of p.e. cf. other subjects	Time desired for p.e.
Great More	5	6	4
	4	6	6
	3		3
	2	1	
Little Less	1		

From Table 5 it is seen that most teachers placed considerable value on physical education when compared with other subjects. Also, most teachers wished for more than three periods each week for physical education.

According to the June, 1981 small group interviews, all teachers agreed that daily physical activity was justifiable and/or desirable (although some made the distinction between activity and education and insisted upon daily "physical education").

The consultant commented that "Teacher attitudes were generally positive toward the project, but strength of attitudes and degree of change in attitudes varied widely." Also, one of the strengths of the program was "the willing and active support of most of the teachers" (consultant interview). That not all teachers had equally positive attitudes toward physical education is evident from the consultant's working notes, wherein he records that two teachers in particular had, on a number of occasions, failed to maintain their physical education lesson schedule or plan for activities.

Although pupils responded to an attitude questionnaire, they were not specifically asked to express an attitude toward physical education as an entity. Pupil attitudes, however, may be gauged from observed behaviours as noted by teachers and the consultant.

When asked to rate (scale of five = like; one = dislike) how well their pupils liked the total physical education program, five teachers gave a rating of five, five teachers gave a rating of four, and one teacher gave a rating of three (Teacher questionnaire, January, 1981). The teachers generally confirmed these opinions of positive pupil attitudes during the group interviews (February, 1981) and the small group interviews (June, 1981), although some teachers reported negative pupil attitudes towards some activities (especially dance).

The consultant also recorded his observations of positive pupil attitudes in his anecdotal notes, memos to teachers, and interview (June, 1981). He noted, however, that pupil attitudes, although generally positive and enthusiastic, varied according to the activity area being taught, and seemed to be at least partially related to attitudes displayed by their teachers.

There is no direct evidence for parent attitudes toward physical education. Most teachers reported that they had received no parent comment concerning the total physical education program, although some parents had commented negatively concerning the school jogging activities. On the other hand, some teachers reported having received positive comments from parents and teachers from neighbouring schools who had attended a day of demonstration physical education lessons taught by Pitt Meadows teachers.

That the school principal, various central office administrators, and members of the school board had positive attitudes towards both physical education and this project was evidenced by the support given this project, by the decision to expand the program, and by the board's financial commitment for 1981-82.

Discussion. There is a halo effect relating to this objective which poses problems in making accurate assessments of attitudes as they are held by various groups and individuals. It seems accurate to state that, in general, most people involved in the project had positive attitudes toward physical education, but it is salutary to point out that most people had reservations concerning at least some aspect of either physical education or the project.

Perhaps the most important issue to consider is that of teacher attitudes, since the quality and extent of any implementation is ultimately their responsibility. Some teachers, although quite accepting of the importance of physical education, were concerned that time devoted to physical education was time subtracted from other subject areas, to the disadvantage of learning in those areas. Other teachers considered physical education to be important, but felt that they lacked the requisite skill and knowledge to teach it properly. This concern was often followed with the suggestion that specialist teachers should be hired on staff to ensure quality teaching in physical education.

A concern mentioned by some teachers related to the feeling that the quality daily physical education project had been "laid on" them, in spite of the fact that the issue had been discussed and decided upon at a staff meeting. Thus, even though the principal had limited the number of school projects and additional impositions upon teachers' time and energy, some teachers had negative attitudes because of felt pressure and stress.

The consultant's anecdotal comment relating the attitudes of pupils to those held by the teachers is worthy of further investigation. It would be of considerable interest and importance to know if and to what extent teachers do shape pupils' attitudes toward physical education (and toward other matters). The fact of not formally assessing pupil attitudes toward physical education was a serious omission in this study.

Similarly, it was unfortunate not to have surveyed parent opinions toward physical education. From various recorded teacher comments on contact with parents, it seems that parents are quite possibly misinformed or uninformed concerning the nature of physical education per se and, in particular, the way it is conducted at Pitt Meadows school.

The attitudes of administrators at all levels is most important. Supportive attitudes held by administrators are much appreciated by teachers. There is a danger, however, that the strength of administrative attitudes may overpower or ignore teacher attitudes, leading to resentment on the part of teachers, or a sense of not "owning" the program they are teaching.

The danger of the halo effect previously referred to notwithstanding, it seems justifiable to state that positive attitudes toward physical education were at least maintained and, in several instances, improved as a result of this program.

Objective 8

To ensure full adoption of a quality daily physical education program through the commitment of teachers.

In light of the experiences gained through the project reported on here, and in keeping with much of the more recent literature on implementation, no attempt will be made to assess this objective at this time. The chief reason for this decision is the limited time over which the implementation has taken place.

At this point in time (July, 1981), it may safely be said that full adoption has not taken place: The discussion under the headings of the seven previous objectives will confirm this statement. Full adoption may be achieved, however, given sufficient time, and with continuing assistance.

A complicating factor in assessing this objective is the variance, already apparent, in the rates at which individuals acquire the skills, knowledge, and commitment necessary for full adoption to take place. This issue will be addressed in a further paper.

Summary

This chapter has examined the eight objectives identified as constituting the purpose of this study. Each objective has been stated, together with evidence concerning the extent of its implementation, discussion focusing on the evidence, and a judgement as to the extent of adoption in general terms.

Recommendations arising from this chapter are presented in Chapter V.

Chapter V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This paper reports on the evaluation of an implementation project. The project comprised the implementation of a quality daily physical education program into a 14-room elementary school in the Maple Ridge school district of British Columbia. The implementation process utilized in this project was derived from a number of models presented in the review of the literature, and which characterially attempted to be: eclectic; teacher-centred; of benefit to pupils; cognizant of the key role of principals; accepting of the change agent role; and sensitive and adaptable to local conditions.

The project was initiated by the principal and staff of the school following two evaluations of the school's programs which revealed certain deficiencies in the area of physical education. With administrative and financial support from the district central office, the principal arranged for the services of a professor of physical education to serve as the external change agent or consultant to the project.

The project as proposed commenced in September, 1980 and ended in June, 1981. The purpose of the project was defined by two complementary goals:

1. To design and implement an educational innovation, specifically that of quality daily physical education; and

2. To monitor, document, and examine the processes used in implementation.

In order to achieve these goals the consultant visited the school on 20 occasions in order to dialogue with teachers, make presentations to them, provide demonstration lessons, observe and team-teach with teachers, and offer feedback

on teaching performance to teachers. As part of his role, the consultant acquired and adapted or developed curriculum materials (especially in the form of lesson plans) in order to assist teachers in preparing balanced and appropriate physical education lessons for their pupils. All physical education classes except one were regularly taught by home-room, generalist teachers.

In order not to jeopardize the objectives of implementation, no attempt was made to conduct specific pre-project evaluations. Measures of pupil attitudes, knowledge, motor skills, and physical fitness were conducted mid-year and in June. Measures of teacher attitudes and demographic information were collected mid-year, but not in June.

Other data collected included teachers', principal's and consultant's opinions and observations concerning the program, and principal's and consultant's working and anecdotal notes.

All data collected were examined in order to provide an illuminative evaluation (Parlett and Hamilton, 1976) of the project. Reliability and validity of the data were checked through the processes of triangulation and corroboration. The data were used to examine eight project objectives which served to define the primary goal. Due to the extensive nature of the report required to examine the primary goal, no report is offered on the secondary goal in this paper. A further paper is proposed for release at a later date.

Conclusions

The conclusions presented below are drawn from data which relate specifically to the situation which existed in the Pitt Meadows elementary school physical education project, 1980-81. It is possible, however, that certain of these conclusions may have particular import for other schools, especially where similar contextual circumstances exist.

From the presentation of data and the discussion contained in Chapter IV, the following conclusions concerning the eight project objectives seem warranted.

Objective 1: It is possible and practical to increase the time allotment for physical education up to four or five periods each week without loss of pupil academic standing or undue stress on most teachers. This conclusion assumes that adequate and proper facilities exist, and/or that teachers are prepared to accept flexible groupings of students for at least some periods each week, in order to accommodate all classes.

Objective 2: Most teachers are capable of learning new teaching skills and styles, and of using them to improve the quality of instruction in their lessons. The chief limiting factors to effective learning appear to be the attitude teachers have toward the innovative skills and styles, and their desire for or acceptance of the proposed change.

Objective 3: The number, variety, and propriety of activities included in physical education lessons may be readily controlled through the use of organized, specified, and appropriate curriculum plans, provided that teachers accept the

plans for use and adapt them to suit their particular pupils. It should be pointed out that it is possible to arrive at an accurate assessment of this objective only after the curriculum materials have been properly examined, and following appropriate observation of lessons in progress.

Objective 4: Assembling a bank of resource materials for school use is a comparatively simple matter: The determination of the suitability of the materials is a more difficult task since there are many variables which require consideration. Teachers require access to appropriate curriculum materials if quality, sequential, school programs are to be implemented and maintained.

Objective 5: Increasing the time allotment from two-to-three lessons weekly to four-to-five lessons weekly appears to be related to fewer discipline problems, improved pupil self-image, and improved academic performance (based upon the observations and opinions of home-room teachers). Also, there appear to be general (but not universal or considerable) increases in pupil attitudes toward physical education, knowledge of physical education factors, and performance of certain motor skills.

Objective 6: As noted for Objective 2, most teachers are competent learners and readily grasp new knowledge and understanding if they have the commitment to do so. New knowledge is more readily learned: If it has significance for teachers; if it can be related to existing knowledge; if it can be shown to be of practical value (especially through actual demonstration); if it is presented in an appropriate and empathetic manner; if teachers are given time to become comfortable with the innovation; and if teachers are treated in individual and personal ways.

Objective 7: This objective is better considered as having two parts. Firstly, there is little doubt that pupils, teachers, and administrators have generally positive attitudes towards physical education. Although acknowledging the importance of physical education, a few teachers considered that five periods of thirty minutes weekly detracted from time which should more properly be assigned to other subjects.

Secondly, several teachers considered physical education to be important, but preferred not to teach the subject themselves. Their recommendation was that physical education should be taught by appropriately qualified specialist teachers.

Parents' attitudes were not directly assessed and there is insufficient data to make a judgement.

Objective 8: One year is insufficient time to expect the full adoption of an innovation such as is represented by the project reported on here. Also, the scope of the term requires clarification and delineation; for example, is the appropriate unit of measure one individual teacher, or the total school staff? How should "full adoption" in a school be measured when teachers leave and replacements take their places? Full adoption of all program objectives undoubtedly did not occur by June, 1981. It seems fairly certain, however, that many objectives were significantly or at least partly achieved.

Recommendations

In recognizing that this investigation was based upon a single case (that of an implementation project), one should also accept that the study principally involved 45 grade three and 45 grade seven pupils, 13 teachers, a principal, and a consultant. In addition, a further 290 pupils ranging from kindergarten through grade seven were also involved. The following recommendations are made in light of the context of the Pitt Meadows elementary school physical education project, but they may have a more general significance.

1. Before attempting to implement educational innovations, care should be taken to ensure that all necessary physical conditions exist (or will be made available at appropriate times) for the success of the innovation to be possible.

   Rationle: The major task of the implementation process is to effect changes in people: This is more readily done when the change is facilitated and made possible by exercising control over non-sociological factors.

2. Teachers should be presented with sound rationales for accepting the proposed innovation. They should see it as better or more preferable than existing practice.

   Rationale: If teachers are convinced that a proposed innovation is acceptable and desirable to them, they will seek ways to implement it; if the innovation is not acceptable, they will seek ways to circumvent or subvert it.

3. Basic curriculum materials which accurately interpret and reflect current educational concerns and "best practice" should be readily available for use by teachers at appropriate times throughout the implementation process. Teachers should be assisted and encouraged to adapt the materials in acceptable ways for use with their own classes.

   Rationale: A degree of prescription may be necessary in order to ensure that the proposed innovation is properly interpreted; teachers rarely have the time or ready knowledge to devote to the preparation of detailed curriculum materials; teachers should be enabled to meet the particular needs of their pupils. All of these conditions may be met through an appropriate bank of readily available and usable curriculum materials.

4. All elementary school teachers should be urged (assisted, and required) to ensure that their pupils engage in quality daily physical education for at least three instructional and at most two fitness physical education lessons weekly.

   Rationale: Quality daily physical education currently represents the only means of assuring that virtually all children receive the movement experiences necessary for physically healthy lives, and for learning knowledge, attitudes, and skills which will enhance the quality of their lives. Furthermore, the fact of daily physical education appears to be positively related to improved pupil behaviours, self-image, and academic performance.

5. If physical education non-specialist teachers are to be required to teach the bulk of physical education lessons, then a system of inservice education or professional development, together with appropriate inducements, must be prepared in order to ensure that teachers acquire the necessary knowledge and understanding to conduct satisfactory programs.

   Rationale: Pupils may show greatest benefits when taught by physical education specialists but, if such an arrangement is not financially or educationally acceptable then, to ensure that pupils are not deprived, physical education non-specialist teachers must be assisted in developing their knowledge and skills as necessary.

6. Parents should be kept informed concerning school physical education programs, and the participation of their children in relation to the goals of physical education.

   Rationale: Parent attitudes undoubtedly influence the attitudes of their children. It is assumed that well-informed parents (knowing the benefits to be obtained from physical education, and recognizing the quality of the school program) will have positive influences on their children's attitudes toward and participation in the school's physical education program.

7. Sufficient time should be allowed for implementation projects to achieve success. Varying amounts of time may be required, but major innovations (such as the one reported on here) probably require a number of years in order to arrive at an acceptable level of adoption.

   Rationale: For various reasons, including pre-existing knowledge, attitude, aptitudes, and abilities, teachers adopt innovations at varying rates. The degree of change necessary for some teachers to achieve full adoption seems to require more than the one year allotted this project.

8. The responsibility of teachers with respect to Ministry of Education directives should be clarified.

   Rationale: If teachers are to be expected to comply with directives, then they must be provided with all that is necessary for them to achieve the set goals of the directive. If teachers are to be allowed to exercise their own discretion in following directives, then ways must be found to convince them of the need and desirability of complying with important directives and, in these instances, teachers should be encouraged in developing a sense of ownership of the program (as opposed to having it imposed upon them).

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Appendices

APPENDIX A — The Consultant

Teaching experience: 12 years of public school teaching children ranging in age from 6 to 16, mainly in physical education.

University experience: 11 years teaching undergraduate and graduate courses in curriculum and instruction in physical education; 11 years as supervisor and advisor of student teachers.

Experience in educational administration: four years as coordinator of a field-based program for student teachers in elementary schools.

Academic and professional preparation: Teachers' Certificate; Diploma in Physical Education; B.Ed. (Sec.); M.Sc. (in Physical Education); Ph.D. (in Curriculum Studies, Department of Elementary Education).

APPENDIX B — The Principal

Experience as principal: three years at present school, one and one-half years at a prior school.

Teaching experience: seven years at elementary school.

University experience: two years teaching undergraduate courses in curriculum and instruction in physical education; two years as supervisor and advisor of student teachers.

Academic and professional preparation: Teachers' Certificate; Diploma in Physical Education; B.Ed. (Elem.); M.Ed.

APPENDIX C — The Teachers

Number: 13 (9 female; 4 male)

Ages: 21-25 (2), 26-30 (4); 31-35 (4), 36-40 (2), 46-50 (1)

Years of experience: 4-6 (5), 7-10 (4), 11-15 (3), 16+ (1)

Professional preparation: 1-3 years (3), B.Ed.-elem. (7), BPE - plus teacher education (2), B.Ed.-sec. (1).

Pre-service physical education courses taken: no courses (5); one methods course (4); some activity courses (1); methods, theory, and activity courses (3).

In-service courses/workshops taken: two courses/workshops (3)

Physical education classes: teach p.e. only to own class (12); teach p.e. to two classes (1).

APPENDIX D Interview Questions

1. Consultant (June, 1981)

1. Why was the Pitt Meadows project initiated?
2. What was your role in this project?
3. This project seems to have dual purposes of quality instruction and implementation of daily P.E. Explain.
4. In your opinion, should the university be working with the school system in projects of this nature?
5. Why did you select Mosston's levels F, G, H (guided discovery, divergent, and going beyond styles) based on a movement education approach in the Pitt Meadows project?
6. In this project, the majority of classroom teachers seemed to lack knowledge of task analysis, learning hierarchies, and psychomotor skills. How did you solve this problem?
7. Should elementary schools have a P.E. specialist on staff?
8. During the project teachers were given materials on each topic presented. Why? Did you find that these materials suited your and teachers' needs?
9. In the project, teachers had the opportunity to observe you teach. Were there any problems in directing teacher attention to watching specific items?
10. You had the opportunity to observe teachers. Explain the feedback system used and any problems encountered.
11. What financial support was necessary for this project?
12. What support services are necessary from the teachers; school administration (xeroxing, etc.); school district?
13. Explain the implementation process used and any changes necessary in the future.
14. How do you feel about extending this project to other Maple Ridge schools?
15. Although the project is complete, which facets need revision/improvement?
16. During the project, did you notice any teacher or student improvement in (a) attitude, (b) skill development, (c) approach to problem solving, and (d) knowledge and understanding?
17. In your opinion, what were the strengths and weaknesses of this project?
18. In your opinion, did the quality of instruction improve during the project?
19. Rate the quality of instruction, pre- and post-project.
20. Rate the implementation of daily P.E., pre- and post-project.

2. Teacher group interviews (February, 1981)

1. Why was this p.e. project initiated at Pitt Meadows elementary school?
2. How would you rate your standard in instruction in p.e. prior to September and now?
3. Should teachers be more involved with the planning and evaluation of projects, how could this be done?
4. What would you require in terms of time and materials to assist you in preparing lessons?
5. How can the project leaders help you more effectively?
6. What's the point of this Pitt Meadows daily p.e. project? What is its purpose?
7. Have you observed any change in people's attitude towards p.e.?
8. Have you observed any change in people's attitudes towards each other, towards you, towards the consultant, during the project?

APPENDIX D (contd.)

2. Teacher group interviews (contd.)

9. Do you feel a need within the school for one or more p.e. specialists?
10. Would you be willing to instruct another class when your class was having physical education?
11. Are you convinced that daily p.e. is justifiable?

3. Teacher small group interviews (June, 1981)

1. What effects has this program had on the quality of your instruction?
2. To whom or what would you attribute the credit or responsibility for the changes in instructional quality?
3. How do you feel about extending this program of daily p.e. to other Maple Ridge schools? Recommendations?
4. How would you initiate daily p.e. into a school program?
5. Assuming this project terminates in late spring, which teaching method would you use next year? (traditional, educational, combination)
6. In which ways has your understanding of p.e. improved during this project?
7. Are you convinced that daily p.e. is justifiable?
8. What feedback, if any, has there been from the parents or community?
9. Have you noticed any student improvement in the following areas: attitude, skill development, approach to problem solving.
10. What changes are necessary to improve this project for next year?
11. Are there any questions or concerns you wish to raise?
12. Rate the success of the rpoject on a scale of 1-5.

PLEASE DO NOT WRITE YOUR NAME ON OR SIGN THIS FORM.

APPENDIX E

PITT MEADOWS P.E. PROJECT

Please comment freely throughout the questionnaire.

Thank you for your time and cooperation.

PART 1. PROFESSIONAL MATTERS (check the appropriate box):

1. Sex ☐ MALE ☐ FEMALE

2. Age ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ 41-45
☐ 46-50 ☐ 50-55 ☐ 56-60 ☐ 61-65

3. Years of experience in school teaching:

1.1 ☐ first year to three years

1.2 ☐ four to six years

1.3 ☐ seven to ten years

1.4 ☐ eleven to fifteen years

1.5 ☐ sixteen or more years

4. Institution at which you obtained most of your professional education:

_____

5. Professional education (check as many as appropriate):

1. ☐ 1-3 years of university (state # of years_____)
2. ☐ B.Ed. (Elem) -- 4 year degree (check if P.E.major_____)
3. ☐ B.Ed. (Sec) -- 5 year degree (check if P.E.major_____)
4. ☐ B.P.E. plus professional year (check elem.___sec.___)
5. ☐ M.P.E. or equivalent -- (check if P.E. emphasis_____)
6. ☐ other Canadian professional certification (state title_____)
7. ☐ other British professional certification
8. ☐ other American professional certification
9. ☐ any other professional certification

6. Physical Education courses taken as part of degree/certificate:

Activity	Theory	Methods of Instructi
1. ☐ Ed. Gymnastics	8. ☐ Growth/Development	16. ☐ Elem. P.E.
2 ☐ Artistic Gymnastics	9. ☐ Tests/Measurement	17. ☐ Sec. P.E.
3. ☐ Swimming/Aquatics	10. ☐ Health Education	18. ☐ Other_____

6. cont'd

4. ☐ Dance/Rhythmics
5. ☐ Games, Contest, Relays
6. ☐ Fitness/Conditioning
7. ☐ Other_____
11. ☐ Adapted P.E. (Perceptual motor)
12. ☐ Motor Learning
13. ☐ Organization/Administration in P.E.
14. ☐ Activities for young children
15. ☐ Other_____

7. P.E. inservice education of teachers. State title of workshops you have attended during last 3 years and rate their value to your teaching:

1.1_____	1.2	Good	5	4	3	2	1	Poor
2.1_____	2.2	Good	5	4	3	2	1	Poor
3.1_____	3.2	Good	5	4	3	2	1	Poor
4.1_____	4.2	Good	5	4	3	2	1	Poor
5.1_____	5.2	Good	5	4	3	2	1	Poor
6.1_____	6.2	Good	5	4	3	2	1	Poor

8. Your role in P.E.:

1. ☐ teach only own class P.E.
2. ☐ teach several classes P.E.
3. ☐ teach P.E. full time
4. ☐ teach and act as P.E. resource person in school
5. ☐ do not teach P.E. (state what you do teach_____)
6. ☐ teach part time only

12. Teacher support services for the P.E. program (rate the value to you of each source of assistance):

Source (check if available to you)		Rating						
1. P.E.Consultant	☐	Good	5	4	3	2	1	Poor
2. Principal	☐	Good	5	4	3	2	1	Poor
3. School P.E.Specialist	☐	Good	5	4	3	2	1	Poor
4. B.C.P.E.Curriculum Guide	☐	Good	5	4	3	2	1	Poor
5. P.E. Textbooks	☐	Good	5	4	3	2	1	Poor
6. Print Materials	☐	Check below for type						
6.1 plans for daily lessons	☐	Good	5	4	3	2	1	Poor
6.2 plans for activity units	☐	Good	5	4	3	2	1	Poor
6.3 total P.E. program plan	☐	Good	5	4	3	2	1	Poor
6.4 other(state_____)	☐	Good	5	4	3	2	1	Poor

13. Time spent in preparation for instructing P.E. lessons:(state average time spent per week in preparing for school P.E. lessons NOT including the lesson itself):

1.☐ no time 2.☐ 10 minutes 3.☐ 30 min. 4.☐ 45 min.
5.☐ 1 hour 6.☐ 2 hours 7.☐ more than 2 hours

Comment

PART II. TEACHER BELIEFS, ATTITUDES, BEHAVIOURS

14. What value in the following areas has P.E. to children:

1. cognitive domain (knowledge and understanding)	Great	5	4	3	2	1	Little
2. health and fitness	Great	5	4	3	2	1	Little
3. psychomotor domain (physical abilities and skills)	Great	5	4	3	2	1	Little
4. personal-social relationships	Great	5	4	3	2	1	Little
5. emotional -- stress-reducing	Great	5	4	3	2	1	Little
6. other (state_____)	Great	5	4	3	2	1	Little

15. What value has P.E. compared with other school subjects? Great 5 4 3 2 1 Little

16. Would you prefer that your pupils had more or less P.E. time than they presently have? (i.e., 3/week) More 5 4 3 2 1 Less

17. Of what benefit is the P.M.E. P.E. Project program (or daily P.E.) to your pupils in the following areas:

1. sound nutritional values	Great	5	4	3	2	1	Little
2. positive attitude toward physical activity	Great	5	4	3	2	1	Little
3. reduction of discipline problems	Great	5	4	3	2	1	Little
4. improved self image	Great	5	4	3	2	1	Little
5. improved academic performance	Great	5	4	3	2	1	Little
6. acquisition of motor skills	Great	5	4	3	2	1	Little
7. other (state_____)	Great	5	4	3	2	1	Little

18. Do you enjoy teaching the P.E. program?

1.1☐ Yes 1.2 state reason_____

2.1☐ No 2.2 state reason_____

19. Who should teach the P.E. program?

1.☐ home room teacher ☐ Other _____

2.☐ P.E. specialist

20. Do you feel adequately competent in teaching the P.E program unassiste

1.☐ Yes 2.☐ No (state what help you would like_____

21. To what extent have the demands of P.M.E. P.E. Project been excessive

22. To what extent are you a more physically active person as a result of the project?

1. ☐ Not at all
2. ☐ Great 5 4 3 2 1 Little

24. Grading policies for report cards should be the same for P.E. as for all other school subjects:

Strongly agree 5 4 3 2 1 Strongly disagree

25. To what extent are you satisfied with the total P.M.E. p.e. project:

Great 5 4 3 2 1 Dissatisfied

Comments: _____

_____

PART III. TEACHERS' PERCEPTIONS OF ELEMENTS OF THE PROGRAM

26. Time allotment given for P.E. for your class(es) (circle appropriate figure)

1. frequency of lessons per week 1.1 [5] 1.2 [4] 1.3 [3] 1.4 [2] 1.5 [1]
2. duration of lessons (in minutes) 1.1 [80] 1.2 [60] 1.3 [40] 1.4 [30] 1.5 [20]

27. Extent of pupil participation in your class

1. ___ child solicited excuses allowed
2. ___ parent solicited excuses allowed
3. approx. percentage of time average pupil is positively physically actively engaged in lessons

3.1 [90%+] 3.2 [80%] 3.3 [70%] 3.4 [60%] 3.5 [50%] 3.6 [less]

29. Basis of your P.E. program --

1. child centred decision making providing for success for each child, including "special" children — Great 5 4 3 2 1 Little
2. teacher centred decision making with much direct/formal instruction — Great 5 4 3 2 1 Little
3. a pre-set program rigidly adhered to — Great 5 4 3 2 1 Little
4. activities based on principles of child growth and development — Great 5 4 3 2 1 Little
5. activities based on knowledge of skills and structure of activities — Great 5 4 3 2 1 Little

30. Focus of your P.E. program:
rank order (state whether 1st, 2nd, 3rd.. etc. in importance):

1. ____ physical fitness
2. ____ positive attitudes to physical activity
3. ____ development of physical skills
4. ____ positive social attitudes
5. ____ to "let off steam"
6. ____ to develop competitive spirit
7. ____ sound knowledge of nutrition and good eating habits

32. What are the best, most valuable features of the P.M.E. P.E. Project

1. _____ Valuable 5 4 3 2 1 Worthles
2. _____ Valuable 5 4 3 2 1 Worthles
3. _____ Valuable 5 4 3 2 1 Worthles

33. What aspects of the P.M.E. P.E. Project require improvement?

1. _____ Urgent 5 4 3 2 1 Not Urge
2. _____ Urgent 5 4 3 2 1 Not Urge
3. _____ Urgent 5 4 3 2 1 Not Urge

34. What aspects of the program should be eliminated or omitted?

1. _____
2. _____
3. _____

35. How well are you satisfied that the most appropriate activities are being taught at your class grade level?

Very satisfied 5 4 3 2 1 Very dissatisfied

Recommended additional activities:	Activities recommended for deletio
2.1 _____	3.1 _____
2.2 _____	3.2 _____
2.3 _____	3.3 _____